Tuberculosis – for Safety for Health Care Workers

Introduction

The rise in tuberculosis cases is a particular concern for health care facilities. They must identify and treat the disease as early as possible in order to help the victims and keep TB from spreading to other patients, visitors, and health care workers. The federal Centers for Disease Control and Prevention (CDC) guidelines identify the practices that can control the spread of TB in the workplace. These guidelines particularly concern the control of occupational exposure to TB in health care facility correctional institutions, long-term care facilities for the elderly, homeless shelters, and drug treatment centers.

Learning Objectives

At the conclusion of this training the trainee should:
Be familiar with tuberculosis symptoms and health effects and the importance of early detection and treatment.
Know how tuberculosis is spread.
Understand how engineering and work practice controls can help protect health and prevent the spread of TB.
As a result, follow procedures that will keep TB from spreading in the facility.

Background

Tuberculosis (TB) is a bacterial disease that affects the lungs and respiratory system. It was once very common, then almost disappeared for years. Now it's making a comeback, which is a serious concern for health care facilities.
TB bacteria are carried by highly infectious airborne particles called droplet nuclei. Not everyone who is infected gets sick. But after a period of months, years, or even decades, TB can cause serious illness and even death, especially for people with weakened immune systems.
The CDC has issued guidelines designed to reduce the TB risk for health care facilities and employees. They call for early identification and treatment of people who are infected and a series of controls within the facility to prevent the spread of infection.

Tuberculosis (TB) Is a Highly Infectious Bacteria

It spreads when a person with active TB sneezes, coughs, speaks, or sings and expels airborne particles called droplet nuclei.
Some high-risk medical procedures that induce coughing or aerosols further increase the risk.
Others become infected when they inhale the droplet nuclei that move through a room or building.

Tuberculosis Affects the Lungs and Respiratory System

The particles move through the mouth or nose into the lungs and through the body.
TB usually remains in the lungs.
It sometimes spreads, causing pain in the lung lining, kidneys, or bones in the spine or large joints like the shoulder or hip.
TB is very serious, occasionally even fatal, for people whose immune systems aren't able to fight disease.
TB symptoms include:
A cough that lasts three or more weeks.
Bloody saliva, fatigue, night sweats, loss of appetite and weight, anorexia, or fever.

TB Usually Responds Well to Early Action

Get tested if you show symptoms or have been exposed to someone with TB.

Health care employers test employees for TB when they're hired or if they have been exposed to someone with TB.

HIV-infected or other immunosuppressed people should be especially cautious about exposure to TB infection.

If initial skin tests indicate TB exposure, they're followed by X rays and/or saliva analysis.

Health care employees are retested after a post-exposure test and at least annually while employed.

Antibiotic treatment lasts for several months, though it usually cures symptoms in a few weeks.

Some forms of TB don't respond to antibiotics.

Health Care Facilities' Infection Control Plans Fight TB Spread

Plans reflect risk level, which is based on number of TB patients, evidence of on-the-job transmission, and community TB rates.

Infection control plans:

Identify, evaluate, isolate, counsel, and treat TB patients.

Use ventilation, respiratory protection, and other controls to keep infection from spreading.

Educate, train, counsel, and screen employees.

Isolate TB Patients to Prevent the Spread of Disease

The first step in preventing the spread of TB is to quickly identify, isolate, and properly treat contagious patients.

Facility policy states when and how to isolate, monitor, and release TB patients.

Explain isolation reasons and practices to patients.

They must remain in the room with the door closed.

They must always cover mouths and noses with a tissue when coughing or sneezing.

Isolate TB Patients to Prevent the Spread of Disease – continued

Signs outside rooms warn visitors of "special respiratory isolation."

Limit visitors as much as possible.

Contact with infected individuals requires that you wear an approved respirator.

High-hazard medical procedures must be done in approved treatment rooms, booths, and/or hoods.

When patients must go elsewhere in the facility, choose times and places that minimize contact with others.

Be sure patients wear masks outside the room.

Place suspected infectious TB patients in separate emergency rooms or areas.

If elective operations can't be delayed, perform them behind closed doors

Engineering Controls Help Prevent Spread of TB

Isolation rooms contain and exhaust ventilation directs air flow outside or away from uninfected areas.

Contaminated air can be cleaned with filters and ultraviolet radiation.

Wear Respirators to Avoid Inhaling Droplet Nuclei

Your facility has a written respiratory protection program. It specifies when, where, and how to correctly use and care for your respirator.

Your facility will tell you which NIOSH-approved respirator to use under different circumstances.

Your employer must check your health and train you before you may use a respirator.
Respirator fit-testing is required to assure a proper fit and snug seal.
Inspect respirators for leaks and damage before each use.
Clean and disinfect non-disposable respirators thoroughly after each use.
Store respirators in a clean area with no dust, light, heat, cold, moisture, or chemicals.
A surgical mask is not a respirator. They are not approved for protection against airborne TB.

Observe All Warning Signs and Tags

Various warnings will be posted outside isolation or treatment rooms (“Stop,” “Halt,” “biological hazard”).
Follow all posted precautions (e.g., respirators must be donned before exiting).

Some records raise employee privacy issues

Privacy cases involve injuries or illnesses to an intimate body part or the reproductive system, a sexual assault injury or illness, mental illness, HIV infection, hepatitis, tuberculosis, needlestick injuries, and cuts from objects contaminated with blood or other infectious material. If you're dealing with a privacy case, you may not enter the employee's name on the logs, but rather you should enter "privacy concern case" in place of the name. Then you must keep separate, confidential lists of case numbers and employee names so that cases may be identified and updated. In addition, HIPAA (Health Insurance Portability and Accountability Act) imposes national standards to protect individuals' medical records and other personal health information. HIPAA privacy rules provide that, in general, an employee's healthcare information may not be disclosed without permission, except for treatment, payment, or healthcare operations

Summary

Tuberculosis is a highly infectious bacterial disease that affects the lungs and respiratorysystem. It’s spread when people inhale airborne droplet nuclei produced when infected persons sneeze, cough, speak, or sing.
TB infection doesn’t always lead to illness but can be serious, even fatal, for people with weak immune systems.
TB symptoms that call for testing include a lasting cough, bloody saliva, night sweats, and weight loss.
Federal guidelines call for early identification of TB, isolation to prevent the spread of infection, and effective treatment of the illness.
Antibiotic treatment is usually effective when positive TB skin tests, followed by X rays and/or saliva analysis, reveal TB infection.
Health care facility infection control plans, based on level of risk, define how to treat and prevent the spread of TB.
TB patients stay in well-ventilated isolation rooms with doors closed. Visitors are limited and must wear respirators.
TB patients must cover noses and mouths with tissues when coughing or sneezing, even in isolation, and wear masks if they leave the room.
TB patients are treated in their rooms whenever possible, avoiding procedures that induce coughing or generate aerosols.
Health care workers should wear properly selected and fitted respirators in TB isolation rooms, during cough- or aerosol-producing procedures, and when other protections aren’t present.

Applicable Regulations – No Audio

OSHA General Duty Clause, Section 5.(a)(1)

OSHA Respiratory Protection for M. Tuberculosis Standard (29 CFR 1910.139), Access to employee medical and exposure records (29 CFR 1910.1020); Accident prevention signs and tags (29 CFR 1910.145), and OSHA 200 Log (29 CFR 1904)

For reference see:

Centers For Disease Control and Prevention "Guidelines for Preventing the Transmissionof *Mycobacterium tuberculosis* in Health-Care Facilities," 1994. CDC Publication MMWR Oct. 28, 1994/Vol. 43/No. RR-13.

Protect Yourself Against Tuberculosis—A Respiratory Protection Guide for Health Care Workers. A NIOSH Educational Document, Publication No. 96-102.